

**U.S. Department of Energy
Oak Ridge Operations Office**

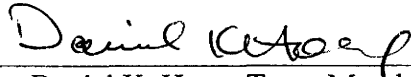


Final Report

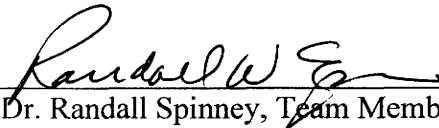
**Review of the Oak Ridge Operations
Office Safety System Oversight Program**

December 2004

Team Approval



Daniel K. Hoag, Team Member



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**Review of the Oak Ridge Operations Office Safety System Oversight Program
Final Report**

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Executive Summary

Initial implementation of the Safety System Oversight (SSO) function being established at the Department of Energy Oak Ridge Operations Office (ORO) was reviewed by a three-member team composed of the ORO Deputy Assistant Manager for Laboratories; the Director of Operations Management from the Y-12 Site Office, National Nuclear Security Administration, representing the DOE Federal Technical Capability Panel; and a representative from the ORO Training and Development Group. Two of the members of the team are qualified Senior Technical Safety Managers.

The narrative in the report corresponds to each of the Criteria Review and Approach Document (CRAD) objectives and reflects the specific requirements of the CRADs. It is based on interviews and review of existing and draft ORO SSO Program documentation, training records, and other amplifying information. The ORO SSO program is not established, and significant program elements need to be developed and finalized in order to meet the implementation schedule of December 2005. The team identified positive observations, one deficiency (comprising numerous negative observations), and three recommendations:

Positive Observations

Although the ORO SSO Program is in its early stages, the assessment team noted the following positive aspects that will contribute to the development of the program:

1. ORO has identified the vital safety systems/safety systems in accordance with Defense Nuclear Facilities Safety Board Recommendation 2000-2, *Configuration Management, Vital Safety Systems*, to which the SSO personnel will be assigned.
2. Line and staff personnel are aware of and involved in development and implementation of the SSO Program.
3. Some SSO Program documents exist (e.g., procedure EM-2.2 and Section 4.3.2.1 of ORO Manual 100, *ORO Management System Description*).
4. Draft program documents have been developed (e.g., OSOP-422, "Safety System Oversight," the "Safety System Oversight Office-Specific Qualification Standard," and ORO Order 420, Chapter XV, "Safety System Oversight Program").
5. Qualified Senior Technical Safety Managers are in place to oversee/supervise personnel with SSO responsibilities.
6. The Assistant Manager for Environmental Management and the Assistant Manager for Laboratories organizations have drafted SSO implementation/action plans.

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Negative Observations

The following observations roll up into the single ORO SSO Program deficiency stated below:

1. The majority of the ORO SSO Program documentation is in draft form.
2. Training and qualification materials (e.g., qualification cards) do not exist, and the SSO qualifying officials are not formally identified.
3. The SSO candidates and systems are informally assigned, although it appears that ORO has made an effort to assign the most appropriate persons.
4. Defined skills and knowledge for SSO personnel are not formally identified.
5. The SSO function is not identified in performance plans or position descriptions.
6. There were no assigned SSO incumbents available for interview during this assessment because of organizational changes and the timing of the assessment.
7. ORO Manual 411.1-1E, *Manual of Safety Management Functions, Responsibilities, and Authorities, Level II, for Oak Ridge Operations*, does not identify SSO functions.
8. The SSO Program documents need to articulate an interim qualification process for SSO personnel.

Deficiency

SSO-DEF-1 The ORO SSO Program is not established.

Recommendations

- SSO-REC-1** All draft SSO Program documents need to be finalized, approved, and implemented.
- SSO-REC-2** ORO should consider developing a project plan for the SSO Program to address the deficiency. A senior manager should be assigned responsibility for overseeing implementation of the plan.
- SSO-REC-3** ORO should routinely track and report the status of the project plan tasks and activities to implement the SSO Program and periodically report the status to SSO Program principals and ORO senior management.

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1.0 INTRODUCTION

This review was conducted to meet the commitments in the *Federal Technical Capability Panel Fiscal Year (FY) 2004 Annual Plan*. Action 2.6 states that reports on the initial Safety System Oversight (SSO) program implementation assessments will be completed by December 2004. DOE Manual 426.1-1A, *Federal Technical Capability Manual*, defines the knowledge, skills, and abilities to be incorporated into technical qualification programs for personnel assigned the SSO function. This objective of this review was to assess the initial actions taken by the Department of Energy (DOE) Oak Ridge Operations Office (ORO) to implement the SSO program and function.

2.0 SCOPE AND METHODOLOGY

The review included document reviews and interviews with selected ORO personnel. The team used the Criteria Review and Approach Documents (CRADs) developed by the Federal Technical Capability Panel. The elements reviewed included the CRADs for Program, Training and Qualification, and Management. Due to the state of the program, the review did not include the CRAD for Oversight Performance.

The review was conducted by a three-member team composed of the ORO Deputy Assistant Manager for Laboratories; the Director of Operations Management from the Y-12 Site Office, National Nuclear Security Administration, representing the DOE Federal Technical Capability Panel; and a representative from the ORO Training and Development Group. Two of the team members are qualified Senior Technical Safety Managers (STSMs). The third team member, representing the ORO Training and Development Group, is highly experienced and has over 30 year of experience in training and education and over 20 years of experience in the nuclear industry. See Appendix B for the list of team members, their organizations, and their assignments.

3.0 ACRONYMS

AMEM	Assistant Manager for Environmental Management
AMESH	Assistant Manager for Environment, Safety, and Health
AML	Assistant Manager for Laboratories
CRAD	Criteria Review and Approach Document
DOE	Department of Energy
EM	Environmental Management
e-mail	electronic mail
ES&H	Environment, Safety, and Health
ORO	Oak Ridge Operations Office
SSO	Safety System Oversight
STSM	Senior Technical Safety Manager
TQP	Technical Qualification Program

4.0 RESULTS

The following narrative, which corresponds to each of the CRAD objectives and reflects the specific requirements in the CRADs, is based on interviews and review of existing and draft ORO SSO Program documentation, training records, and other amplifying information. However, there were no assigned SSO incumbents available for interview or observation during this assessment because of organizational changes and the timing of the assessment.

Program

There are three ORO organizations involved in establishing the SSO Program: the Assistant Manager for Environment, Safety, and Health (AMESH), the Assistant Manager for Laboratories (AML), and the Assistant Manager for Environmental Management (AMEM). The AML and AMEM are line organizations, and the AMESH is a support organization that is currently coordinating the development and institutionalization of the SSO Program.

The ORO SSO Program is currently being established. Although some of the documentation to establish and institutionalize the program describes the SSO function (e.g., ORO Manual 100, *ORO Management System Description*, Chapter I, "Performance Assessments," Section 4.3.2.1), nearly all program-specific documentation is in draft or in a "to-be-developed" stage. For example, the *ORO Management System Description* states, "Safety system oversight engineers maintain cognizance, perform oversight, and conduct configuration management verification walkdowns of active safety systems credited in the safety basis documents of the facilities." But, the antecedent or predecessor document (ORO Manual 411.1-1E, *Manual of Safety Management Functions, Responsibilities, and Authorities, Level II, for Oak Ridge Operations*) does not address SSO personnel.

The AMEM and AML organizations have prepared SSO-related procedures. The AMEM organization developed procedure EM-2.2, *Environmental Management Systems Engineering*, which was approved in October 2003, and the AML has drafted procedure OSOP-422, "Safety System Oversight." In both cases, the procedures have not been implemented. However, the SSO program documents, such as the draft ORO Order 420, Chapter XV, "Safety System Oversight Program," and the draft ORO "Safety System Oversight Office-Specific Qualification Standard" have been developed and are currently being reviewed for approval. Other program implementation documents, such as safety system-specific qualification cards and materials, have not been developed. While the SSO Program infrastructure is being established, the SSO Program principals interviewed recognized that the training and qualification program is a subset of the ORO Technical Qualification Program (TQP) and that the formal implementation of the program will conform to the ORO *Technical Qualification Program Manual (A Desktop Reference for Supervisors and Participants)*.

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Evidence was provided by the interviewees that the AMEM and AML organizations have identified the specific safety systems in the documented safety analyses that will be addressed by the SSO Program. The specific safety systems to which SSO personnel will be assigned are criticality safety, fire protection, ventilation (heating, ventilation, and air conditioning), instrumentation and control, and critical lift/crane systems.

Preliminary SSO staffing analyses were conducted in 2003, and they need to be updated utilizing the recent Federal Technical Capability Panel workforce analysis methodology and guidance. The managers interviewed indicated that an updated analysis is being developed, and it will be completed in January 2005. While supervisors of personnel with SSO responsibilities have been identified, as stated by the interviewees, and these supervisors are STSMs, not one person has been formally designated as an SSO (either full time or part time). This was confirmed by the assessment team.

According to the Branch Chief in the Human Resources Division that the team interviewed, two expected SSO positions (fire protection) for the AMESH organization have been advertised, and candidates are currently being screened and interviewed, with a projected hire in early 2005. The team reviewed the position posting and the revised position description and found that neither had any indication that this was an SSO position, although both provided the TQP designations.

All of the interviewees were aware of the expected relationship between the SSO personnel and Facility Representatives, and they underscored the need for the two positions to work closely and communicate effectively in order to (a) oversee the contractors' safety programs, safety systems, and the SSOs' counterparts in the safety engineering programs and (b) keep management apprised accordingly.

Further, the interviewees acknowledged that the ORO SSO Program is not fully formalized, and they presented draft implementation plans with the aforementioned program documentation. The assessment team reviewed the implementation plans and action plans and found that they need to be reviewed by ORO management and finalized.

Training and Qualification

ORO's SSO training and qualification program documents and materials are currently being developed. Although preliminary staffing analyses have been conducted, formal assignments of SSO personnel have not been made. Designation of the SSO supervisors has been established according to the interviewees, and these designated supervisors hold STSM qualifications. The assessment team confirmed the AML and AMEM assignments. Moreover, the AMESH coordinating organization is led by a qualified STSM. This, too, was confirmed by the assessment team.

Some SSO personnel have been tentatively identified by the AML and AMEM organizations. A review of three individual's qualification records showed that they have completed their TQP qualification programs. For example, the three of them have completed the *General Technical Base Qualification Standard* and the appropriate ORO

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Office/Facility-Specific Qualification Standards. One of them has completed the *Nuclear Safety Systems Functional Area Qualification Standard*, the second one has completed the *Senior Technical Safety Manager Functional Area Qualification Standard* and the *Facility Representative Functional Area Qualification Standard*, and the third one has completed the Functional Area Qualification Standards for Quality Assurance, Nuclear Safety Systems, Chemical Processing, Technical Program Manager, and Facility Representative. As stated earlier, although the SSO training and qualification program is currently being established, the actual implementation process will reflect the requirements described in the *ORO Technical Qualification Program Manual (A Desktop Reference for Supervisors and Participants)*.

The two Division Director-level interviewees confirmed that the rigor of the SSO training and qualification program will mirror that of the training and qualification program for the Facility Representatives, but without a formal oral board. They stated that even though the program documentation is still being developed, their expectations are that the SSO Program will have examinations and qualification cards or checklists and will require system walkdowns. These two interviewees also stated that they will be on the list of qualifying officials that has yet to be established.

Management

According to the Division Director-level interviewees, the AMEM and the AML organizations have identified SSO supervisors for their respective organizations. These supervisors understand their role in qualifying SSO candidates, know that the *ORO Technical Qualification Program Manual (A Desktop Reference for Supervisors and Participants)* provides guidance for them, and will carry out their SSO responsibilities when ORO formally assigns personnel to SSO positions and establishes the SSO Program.

Several interviewees noted that once the SSO Program is formalized and implemented, an interim qualification program will be essential to allow designated SSO personnel to carry out their SSO roles while completing their qualification program. This interim qualification process will match the process used for ORO Facility Representatives and is described in the program documentation for the ORO Facility Representative Program. A review of the draft ORO Order 420, Chapter XV, "Safety System Oversight Program," revealed that the document does not address interim qualification.

The interviewees also stated that the supporting SSO Program documentation, such as individual performance and development plans, has not been updated or annotated with the required SSO designation and delineation of SSO duties and responsibilities. They indicated that the flowdown of the SSO Program documents will involve these lower-tier program needs once the overall program is established.

As described earlier, the ORO SSO Program implementation plans have been drafted, but they still need to be reviewed by ORO senior management, revised, and finalized.

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Positive Observations

Although the ORO SSO Program is in its early stages, the assessment team noted the following positive aspects that will contribute to the development of the program:

1. ORO has identified the vital safety systems/safety systems in accordance with Defense Nuclear Facilities Safety Board Recommendation 2000-2, *Configuration Management, Vital Safety Systems*, to which the SSO personnel will be assigned.
2. Line and staff personnel are aware of and involved in development and implementation of the SSO Program.
3. Some SSO Program documents exist (e.g., procedure EM-2.2 and Section 4.3.2.1 of ORO Manual 100, *ORO Management System Description*).
4. Draft program documents have been developed (e.g., OSOP-422, "Safety System Oversight," the "Safety System Oversight Office-Specific Qualification Standard," and ORO Order 420, Chapter XV, "Safety System Oversight Program").
5. Qualified STSMs are in place to oversee/supervise personnel with SSO responsibilities.
6. The AMEM and AML organizations have drafted SSO implementation/action plans.

Negative Observations

The following observations roll up into the single ORO SSO Program deficiency stated below:

1. The majority of the SSO Program documentation is in draft form.
2. Training and qualification materials (e.g., qualification cards) do not exist, and the SSO qualifying officials are not formally identified.
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5. The SSO function is not identified in performance plans or position descriptions.
6. There were no assigned SSO incumbents available for interview during this assessment because of organizational changes and the timing of the assessment.

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7. ORO Manual 411.1-1E, *Manual of Safety Management Functions, Responsibilities, and Authorities, Level II, for Oak Ridge Operations*, does not identify SSO functions.
8. The SSO Program documents need to articulate an interim qualification process for SSO personnel.

Deficiency

SSO-DEF-1 The ORO SSO Program is not established.

Recommendations

SSO-REC-1 All draft SSO Program documents need to be finalized, approved, and implemented.

SSO-REC-2 ORO should consider developing a project plan for the SSO Program to address the deficiency. A senior manager should be assigned responsibility for overseeing implementation of the plan.

SSO-REC-3 ORO should routinely track and report the status of the project plan tasks and activities to implement the SSO Program and periodically report the status to SSO Program principals and ORO senior management.

Attachment A – Objectives and Criteria

PROGRAM (PGM)

OBJECTIVE

PGM.1 – An effective SSO program is established by the Field Element Manager to apply engineering expertise to maintain safety system configuration and to assess system condition and effectiveness of safety management program implementation.

Criteria

- PGM.1.1 The SSO qualification program is part of the TQP. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.b(1))
- PGM.1.2 The SSO program establishes appropriate training, qualification, and performance requirements for SSO personnel and the supervisors are held accountable for achieving them. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.b(2))
- PGM.1.3 The safety systems and safety management programs included in the SSO program align with those systems and programs identified in the applicable documented safety analysis. (DOE M 426.1-1A, Chapter III, Sections 1 and 4.c)
- PGM.1.4 SSO requirements are defined and implemented. For example, the functions, responsibilities, and authorities of personnel assigned to perform safety system oversight and their interface/support of Facility Representatives are clearly defined, SSO staffing needs are identified, and there is a plan or process to ensure future staffing needs are met and maintained. (DOE M 426.1-1A, Chapter III, Sections 1, 2.b(3), and 2.b(4))
- PGM.1.5 Affected DOE and contractor managers understand the SSO role and relationship to Facility Representatives and the contractor's cognizant system engineers, and provide the necessary access and support. (DOE M 426.1-1A, Chapter III, Sections 1 and 3.d)
- PGM.1.6 Qualifying officials are assigned to sign site-specific qualification cards. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.b(6))
- PGM.1.7 The SSO program contains features to verify that SSO candidates possess the required level of knowledge and/or skills to perform assessments and investigations to confirm performance of safety systems in meeting

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established safety and mission requirements. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.b(5))

Approach

Record Review: Review documentation (e.g., site TQP documents, SSO program plan, SSO program procedures, qualification cards and/or standards, internal memorandums, documented safety analyses, etc.) which establish the SSO program and describe its implementation to determine that the program is complete and comprehensive.

Interviews: Interview management personnel with responsibilities for implementing and executing the SSO program to determine if they are familiar with the role of SSO personnel relative to the Facility Representatives and the contractor's cognizant system engineers, if they provide adequate resources for training, qualification, future staffing, and performance of SSO personnel, and if they appropriately qualified to perform their assigned role in the SSO program. Interview qualifying officials to determine if they are familiar with their role and responsibility, they are currently qualified, and they are performing their assigned role.

Field Observation: Evaluate any process used by or directed by the Field Element Manager to determine the effectiveness of SSO program performance.

TRAINING AND QUALIFICATION (TQ)

OBJECTIVE

TQ.1 – SSO personnel and supervisors with responsibilities for SSO personnel are appropriately trained and qualified, or are in the process of achieving qualification.

Criteria

- TQ.1.1 Supervisors with responsibilities for SSO personnel maintain STSM qualification. (DOE M 426.1-1A, Chapter III, Section 1, 2.c (1))
- TQ.1.2 Site-specific qualification standards and cards have been developed and a documented process is implemented to assure that SSO candidates meet, at a minimum, the SSO knowledge, skills, and abilities specified in the *Federal Technical Capability Manual*, DOE 426.1-1A, Chapter III, Sections 1, 5.a, and 5.b.
- TQ.1.3 All SSO personnel have completed or are completing the *General Technical Base Qualification Standard* (DOE-STD-1146-2001) and one or more Functional Area Qualification Standard(s) in a technical area linked to their individual job descriptions. (DOE M 426.1-1A, Chapter III, Sections 1 and 4.a)

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- TQ.1.4 All SSO personnel have completed or are completing the site-specific qualification standard associated with their assigned safety systems. (DOE M 426.1-1A, Chapter III, Sections 1 and 4.a)
- TQ.1.5 SSO supervisors have established methods to assign initial qualification dates, track progress toward qualification, and ensure retraining/requalification occurs as required for each SSO candidate in the qualification process. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.c(4) through (6))

Approach

Record Review: Review qualification records to establish that supervisors and managers of SSO are qualified as STSMs and that SSO personnel are trained and qualified. Review qualification and requalification schedules, staffing plans, training plans, travel funding, etc., to determine that sufficient resources are provided for training, retraining, qualifying, and requalifying SSO personnel.

Interviews: Interview supervisors, training coordinators, SSO personnel, and budget personnel to establish that training and qualification plans and schedules are being executed as planned and that sufficient resources are provided to meet the schedules.

Field Observation: Observe activities associated with the qualification process, such as qualification boards, exams, walkthroughs to determine that the training and qualification process is implemented and functioning effectively.

MANAGEMENT (MG)

OBJECTIVE

MG.1 – SSO Supervisors effectively perform their SSO program responsibilities.

Criteria

- MG.1.1 Site-specific SSO qualification standards and cards are developed. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.c(2))
- MG.1.2 Supervisors have identified and approved SSO candidate selection. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.c(3))
- MG.1.3 Supervisors of SSO personnel have established SSO personnel qualification schedules and are tracking progress. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.c(4)).
- MG.1.4 Supervisors facilitate SSO qualification (e.g., ensure sufficient time and training are provided to complete qualification tasks). (DOE M 426.1-1A, Chapter III, Sections 1 and 2.c(5))

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- MG.1.5 Supervisors ensure SSO personnel are trained and qualified to perform their assigned duties. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.c(6))
- MG.1.6 SSO responsibilities are included and measured in Individual Performance Plans. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.c (7))
- MG.1.7 Ensure SSO qualifications are maintained current by training and assignments planned in Individual Development Plans. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.c(8))
- MG.1.8 SSO supervisors periodically evaluate program effectiveness and implement corrective actions in a timely manner. (DOE M 426.1-1A, Chapter III, Sections 1 and 2.c(9))

Approach

Record Review: Review qualification cards, Individual Performance Plans, and other SSO program documents and procedures to establish that managers and supervisors are effectively performing their responsibilities as defined in the SSO program. Review other documentation used by supervisors to establish SSO program effectiveness and implementation of corrective actions.

Interviews: Interview supervisors and managers to establish that they are familiar with their assigned roles, they perform their assigned duties, monitor the effectiveness of the SSO program and ensure any identified corrective actions are implemented.

Field Observation: Observe any activities associated with SSO program effectiveness evaluations and/or corrective action implementation.

Attachment B – Team Membership

- Johnny O. Moore, Team Leader, Deputy Assistant Manager for Laboratories, ORO, Assignment: Management
- Dr. Randall Spinney, Team Member, Oak Ridge Associated Universities, Assignment: Training and Qualification
- Daniel K. Hoag, Team Member, Assistant Manager for Operations Management, Y-12 Site Office, National Nuclear Security Administration, Assignment: Program
- Karen Brown, Parallax, Inc., Coordinator/Editor

Attachment C – Interviews Conducted and Documents Reviewed

Interviews Conducted

- Safety Basis Team Leader, AMEM
- Chief Operating Officer, AMEM
- Team Leader, Environmental Management (EM) Environment, Safety, and Health (ES&H) Support Team, AMESH
- Deputy Assistant Manager for Environment, Safety, and Health
- Nuclear Engineer (Safety Basis), AML
- Human Resources Specialist (Human Resources Development), Training and Development Group
- Chief, Federal Human Resources Branch, Human Resources Division

Documents Reviewed

Corporate

- ORO Manual 411.1-1E, *Manual of Safety Management Functions, Responsibilities, and Authorities, Level II, for Oak Ridge Operations*, July 15, 2003
- ORO Manual 100, *ORO Management System Description*, June 1, 2004
- *Technical Qualification Program Manual (A Desktop Reference for Supervisors and Participants)*, Revision 1, December 2002
- “Safety System Oversight Office-Specific Qualification Standard,” Revision 0, December 2004 (Draft)
- ORO Order 420, Chapter XV, “Safety System Oversight Program,” December 16, 2004 (Draft)
- *Documented Evidence Needed to Close DNFSB Recommendation 2000-2*, undated
- Qualification records for three tentatively identified ORO SSO personnel
- *Oak Ridge Operations Senior Technical Safety Managers*, December 2004
- ORO memorandum from Robert Poe, AMESH, to R. Schepens, Chair of the Federal Technical Capability Panel, subject: “Update to Workforce Analysis and Staffing Plans for Critical Technical Capabilities Positions at Oak Ridge Operations Office,” January 20, 2004, with attached *Oak Ridge Operations Office Analysis of Critical Technical Staffing*, December 2003
- ORO electronic mail (e-mail) message from Tyrone Harris, AMESH, to J. Moore, M. Branton, and R. Smyth, subject: “Safety System Oversight (SSO) Draft Program Manual and Generic [sic] Qualification Standard/Qual Card,” July 13, 2004 (with e-mail responses between Smyth and Harris)

AMEM

- EM-2.2, *Environmental Management Systems Engineering*, Revision 0, approved October 14, 2003

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- *Final Report for the Focused Integrated Safety Management Assessment of the Office of the Assistant Manager for Environmental Management*, “DOE Oversight – Criterion 8,” October 2004
- *EM Safety System Oversight Action Plan*, December 17, 2004
- *EM SSO Assignment Basis*, December 17, 2004 and December 10, 2004
- *Oak Ridge EM Active Safety System Oversight Coverage*, Revision 0, December 2004
- *DOE ORO EM Safety System Oversight Personnel Qualification Progress*, July 2004
- *Oak Ridge EM Active Safety System Oversight Coverage*, Revision 0, December 2004
- ORO e-mail from Terry Allen, EM ES&H Support Team, to Dennis Boggs, AMEM Chief Operating Officer, subject: “Safety System Oversight (SSO) Draft Program Manual and Generic Qualification Standard/Qual Card,” November 10, 2004
- ORO e-mail from Lawrence Bailey, AMEM, to various, subject: “Documentation Needed to Close Out DNFSB 2000-2,” August 26, 2004, with attached untitled form for tracking qualifications and site documents and list of vital safety systems, both undated (with response e-mail from T. Allen)
- ORO e-mail from Randy Smyth, AMEM, to Lawrence Bailey, AMEM, subject: “DNFSB 2K-2, Safety System Emg [sic] Input,” July 26, 2004 (with responses from L. Bailey, T. Allen, and Smyth)
- ORO e-mail from Terry Allen, EM ES&H Support Team, to Patty Dockery, Training and Development Group, subject: “EM Safety System Oversight Personnel,” June 9, 2004, with attached *Oak Ridge EM Active Safety System Oversight Coverage*, April 21, 2004 (based on Revision 10 of the *List of Active Safety Systems*) and EM-2.2, *Environmental Management Systems Engineering*, Revision 0, October 14, 2003
- ORO e-mail from Scott Foster, AMEM, to Terry Allen, EM ES&H Support Team, subject: “Training Opportunities Related to Safety System Oversight,” February 12, 2004 (in response to an e-mail from Terry Allen listing SSO training opportunities)
- ORO e-mail from Terry Allen, EM ES&H Support Team, to Patty Dockery, Training and Development Group, subject: “EM Safety System Oversight Personnel,” June 9, 2004 (with response e-mail from P. Dockery, June 10, 2004)

AML

- OSOP-422, “Safety System Oversight,” Revision 0 (Draft)
- “Safety System Oversight Implementation Plan, Assistant Manager for Science” (Draft)
- ORO e-mail from Robert Poe, AMESH, to George Malosh, AML, subject: “Basis for Workforce Analysis,” September 7, 2002, with attached “ORO Federal Technical Capabilities by Facility, Data Request Table” form

Other

- Headquarters memorandum from the Federal Technical Capability Panel Chairman to Distribution, subject: “Quarterly Report on Federal Technical Capability,” November 30, 2004, with attached *Status of Qualifications in the Technical Qualification Program (TCP)* and *Status of Filling Technical Skill Gaps*, both dated September 30, 2004